

	<b>Course</b>	<b>BIOL 3401.002/202</b> <b>Genetics</b>
	<b>Instructors</b>	Elizabeth Pickett, PhD
	<b>Term</b>	Fall 2025
	<b>Meetings</b>	002: Tues & Thurs, 10-11:15am, in GR 4.428 202: Thurs, 6-6:50pm, in SLC 1.102

### Instructor Contact Information

<b>Instructor</b>	Elizabeth Pickett, PhD
<b>Office Phone</b>	972-883-2646
<b>Office Location</b>	SLC 2.410
<b>Email Address</b>	beth.pickett@utdallas.edu
<b>Office Hours</b>	Drop-in Mondays 9am-noon in office or via Teams (link to join is available in eLearning) or by appointment (email to schedule)

### General Course Information

<b>Pre-requisites</b>	BIOL 2311 BIOL 2281 or CHEM 2401 or equivalent CHEM 2323 or equivalent
<b>Co-requisite</b>	BIOL 3401.202 Genetics Secondary Lecture (workshop)
<b>Course Description</b>	The phenomenon of heredity, its cytological and molecular basis; gene expression and transfer of genetic information, with a major focus on bacterial and model eukaryotic systems; genetic recombination and chromosome mapping; tetrad analysis; mutations and their role in understanding function; genetic interactions; application of recombinant DNA techniques to genetic analysis. Landmark experiments and their analysis. Problem solving and discussion related to concepts covered in lectures.
<b>Learning Outcomes</b>	By completion of the course students should understand: <ol style="list-style-type: none"> <li>1. Principles and patterns of inheritance</li> <li>2. Structures and functions of chromosomes</li> <li>3. Molecular basis of DNA replication, transcription and translation</li> <li>4. Mechanisms of gene expression in prokaryotes and eukaryotes</li> <li>5. Modern genome technologies including whole genome and whole transcriptome sequencing</li> </ol>
<b>Textbook &amp; Materials</b>	<i>Genetics: Analysis &amp; Principles</i> by Brooker, 8e <b>with Connect Access</b>

## Grading Policies

Item	Qty	Points	Points possible	% Final grade
Attendance and participation	1	150	150	15%
Textbook reading quizzes (5 dropped)	25	5	100	10%
Homework assignments	15	10	150	15%
Exams	4	150	600	60%
TOTAL POINTS POSSIBLE			1000	

## Grading scale

Grade	% cut off		Grade	% cut off
A+	94		C	70
A	90		C-	67
A-	87		D+	64
B+	84		D	60
B	80		D-	57
B-	77		F	Below 57
C+	74			

## Course Policies

<b>Expectations</b>	Students are expected to engage with the lectures, participate in the workshops, complete the assigned readings, and seek assistance for any concepts with which they are struggling.
<b>Classroom Conduct Requirements Related to Public Health Measures</b>	UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2025 semester.
<b>Additional Class Materials</b>	The instructor will provide supplemental class materials, such as lecture slides, through eLearning. These materials may be downloaded during the course but are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> . Lecture slide access will be removed during exam days.
<b>Class Attendance and Participation</b>	Attendance is expected and failure to attend will negatively impact your attendance and participation score (15% of final grade).  You will have the opportunity to earn points based on your attendance and participation in the lecture. You will not be able to earn points if you fail to bring your personal electronic device to lecture. Additionally, you will not earn points if you fail to properly utilize your device during lecture (i.e., turning it on, logging in to eLearning, responding to posted questions, etc.). Submitting answers while not physically present at the lecture or enabling another student to do so is considered

	<p>academic dishonesty and such cases will be referred to the Office of Community Standards and Conduct.</p> <p>Each question presented in lecture is worth 2 points: 1 point for responding and 1 point having the correct answer. Students who earn between 70%-100%, 60-69%, 50-59%, or 0-49% of the total possible points will receive 150, 120, 90, or 0 points respectively. Points will be earned during lectures #3-25. Practice questions designed to accustom you to the system will be presented during lectures #1-2 but will not contribute to your score. See Lecture/Attendance Points FAQ in eLearning for more details.</p>
<b>Class Recordings</b>	<p>Recording of lectures is prohibited. Accommodation will be made if a request is approved by the Office of Student AccessAbility or the Office of the Dean of Students. Recordings must not be published, reproduced, or shared with others, or uploaded to other online environments except to implement an approved accommodation. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a>.</p>
<b>Evening Workshops</b>	<p>The first BIOL3401.202 meeting will take place on September 4. Attending the weekly workshop session is strongly encouraged but not required. Workshop sessions will be led by undergraduate TAs who succeeded in the course in a previous semester. A worksheet for each workshop will be posted at the beginning of the week. UG-TAs will demonstrate solving the questions during the session. An answer key to each worksheet will be posted on Friday each week.</p>
<b>Readings</b>	<p>Chapter readings from the textbook are assigned to be completed before the associated lecture. Reading quizzes for each chapter are due at 11:59pm CT the day before class. The lowest 5 reading quiz scores will be dropped. Reading quizzes account for 10% of the final grade.</p>
<b>Homework Assignments</b>	<p>Homework assignments will be posted in eLearning and require Connect access (which is why it is necessary to get it when you purchase the textbook).</p> <p>Access homework assignments via the links in eLearning so that your score is properly recorded in My Grades. If you accidentally access and submit the homework in Connect, contact your graduate TA to get the points transferred to eLearning.</p> <p>Assignments are due on Mondays by 11:59pm CT.</p> <p>3 attempts will be allowed for each assignment. The best grade of the three will be recorded. Homework assignments account for 15% of the final grade.</p>
<b>Exams</b>	<p><b>EXAMS:</b></p> <ul style="list-style-type: none"> <li>• Four (4) exams will be given during the semester.</li> <li>• Exam dates and times are shown in the calendar at the end of the syllabus.</li> <li>• No exams will be dropped.</li> </ul> <p><b>Exam Format:</b></p> <ul style="list-style-type: none"> <li>• All 4 exams will be online and administered at the UTD Testing Center.</li> <li>• You will have 75 minutes to complete the exam.</li> <li>• Do not miss exams! If exams are missed, you must provide documentation to verify your reason for missing.</li> <li>• Providing a make-up exam is at the discretion of the instructor. In extreme circumstances make-up exams will be permitted. Excused absences</li> </ul>

	<p>permitted to make-up missed exams are as follows: UTD team activity (with letter from organization sponsor), death of an immediate family member, and bona fide medical emergencies (with documentation). Any reason must be presented in writing prior to the exam start as soon as is reasonably possible.</p> <ul style="list-style-type: none"> <li>The following penalty will be applied to any student that misses an exam and notifies the instructor after the exam start time: A student will only be able to score a maximum of 75% (112.5 out of 150) on the makeup exam.</li> </ul> <p>Testing Center Instructions:</p> <ul style="list-style-type: none"> <li>The UTD Testing Center is located at 3020 Waterview Parkway, SP2 First Floor, Suite 11.175, Richardson, TX, 75080.</li> <li>UTD Testing Center hours and guidelines are found at <a href="https://ets.utdallas.edu/testing-center/students">https://ets.utdallas.edu/testing-center/students</a></li> <li>Students MUST reserve their seat for testing at least 48 hours prior to the exam date. Students are encouraged to reserve seats as soon as possible.</li> <li>Students should plan to allow ample time for parking and check-in at the Testing Center. Late arrivals may not be seated to take the exam.</li> <li>Students MUST present their PHYSICAL student ID Comet Card each time to be admitted to the exam. If you do not have a UTD photo ID, plan to get one before the first exam. No other form of identification is acceptable. A driver's license will not work as that does not have your student ID number.</li> <li>No outside materials permitted. If the student violates this policy, an incident report will be filed and submitted to the instructor.</li> <li>Students are monitored while testing. The testing environment and its computers are electronically monitored and recorded to include real-time video and screen captures.</li> </ul> <p>Any accommodation required by the ARC will be honored at the Testing Center.</p>
<b>Late Work</b>	Late work will only be accepted if due to extenuating circumstances as judged by the instructor. Contact the instructor as soon as possible if you have extenuating circumstances.
<b>Comet Creed</b>	<i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i> <i>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</i>
<b>Academic Support Resources</b>	The information contained in the following link lists the University's academic support resources for all students. Please see <a href="http://go.utdallas.edu/academic-support-resources">http://go.utdallas.edu/academic-support-resources</a> .
<b>UT Dallas Syllabus Policies and Procedures</b>	The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <a href="http://go.utdallas.edu/syllabus-policies">http://go.utdallas.edu/syllabus-policies</a> for these policies.

### Academic Calendar – Fall 2025

Week	Date	#	Topic	Reading
1	8/26	1	Overview of genetics	Chapter 1
	8/28	2	Chromosome transmission during cell division and sexual reproduction	Chapter 2
2	9/2	3	Mendelian inheritance I	Chapter 3
	9/4	4	Mendelian inheritance II	Chapter 3
3	9/9	5	Extensions of Mendelian inheritance	Chapter 4
	9/11	6	Non-mendelian inheritance	Chapter 5
4	<b>9/15-17</b>		<b>EXAM 1 (lectures 1-5 and associated readings)</b>	
	9/18	7	Genetic linkage and mapping in eukaryotes I	Chapter 6
5	9/23	8	Genetic linkage and mapping in eukaryotes II	Chapter 6
	9/25	9	Variation in chromosome structure and number	Chapter 8
6	9/30	10	Medical genetics	Chapter 24
	10/2	11	Molecular structure of DNA and RNA	Chapter 9
7	10/7	12	Molecular structure of chromosome and transposable elements	Chapter 10
	<b>10/8-10</b>		<b>EXAM 2 (lectures 6-11 and associated readings)</b>	
8	10/14	13	DNA replication	Chapter 11
	10/16	14	Gene mutation, DNA repair and homologous recombination	Chapter 19
9	10/21	15	Transcription of bacteria	Chapter 12, 14
	10/23	16	Transcription in eukaryotes	Chapter 12
10	10/28	17	Translation, part I	Chapter 13, 14
	10/30	18	Translation, part II	Chapter 13
11	11/4	19	Gene regulation in eukaryotes, part I	Chapter 15
	<b>11/5-7</b>		<b>EXAM 3 (lectures 12-18 and associated readings)</b>	
12	11/11	20	Gene regulation in eukaryotes, part II	Chapter 16
	11/13	21	Non-coding RNAs	Chapter 17
13	11/18	22	Molecular biology technologies	Chapter 20
	11/20	23	Genomic technologies	Chapter 22
<b>FALL BREAK</b>				
14	12/2	24	Population genetics	Chapter 27
	12/4	25	Evolutionary genetics	Chapter 29
15	12/9	26	Exam review	
	<b>12/11-13</b>		<b>EXAM 4 (lectures 19-25 and associated readings)</b>	

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the instructor.***